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SUBJECT: SOUTHERN ITALY'S GROWING ENERGY SECTOR

REF: NAPLES 28 (NOTAL)

**¶11.** Summary: While Italy continues to import up to 90 percent of its energy needs, increasing production in southern Italy has the potential to slightly reduce the country's dependence on oil and gas from Russia and North Africa. Ironically, the growing production in the South has not prevented significantly higher electricity costs there as compared to the Center-North.

Europe's largest inland crude oil reserves are in Basilicata, and in July and September 2008 the discoveries of major natural gas deposits off the coast of Sicily were announced. Energy supplied by renewable sources, in particular solar and wind power, is on the rise in the South, though it still represents only a small fraction of production. An apparently significant potential for geothermal energy remains untapped.

Waste-to-energy projects (one of which is led by an American company) have the potential to solve the South's perennial trash crisis and to lower electricity costs. Bureaucracy, organized crime and local government indifference have hindered implementation of some energy plans. These factors, combined with a lack of well-maintained energy infrastructure, have led to the above-mentioned disparities in the cost of electricity and the quality of service between northern and southern Italy.

End summary.

Overview

**¶12.** Italy imports 90 percent of its energy needs, mostly in the form of oil and natural gas from Russia, North Africa and the North Sea (gas). Much of Italy's relatively small domestic energy production comes from the South, in particular the regions of Basilicata and Sicily. Production through alternative means (mainly wind and solar power) is also increasing rapidly in the South, but these sources still account for a minuscule percentage of Italy's total energy production. According to European Commission statistics, Italy's total domestic energy production increased by 15 percent over the period 1990-2004; energy produced by renewable sources grew by 86 percent over the same period. At the same time, imports of gas increased by 118 percent. There are several re-gasification plants in various planning stages in Southern Italy, with one in Brindisi (Apulia) already approved and nearing completion (others have been proposed for Taranto, Gioia Tauro, Porto Empedocle and Priolo, the last of which appears to be a GOI priority, according to recent remarks by the Environment Minister).

Basilicata -- Europe's Largest Inland Crude Oil Reservoir

**¶13.** The discovery of large oil and natural gas deposits has made Basilicata, one of Italy's poorest regions, an area of strategic importance, not only for Italy but for Europe. Although oil was discovered in the region 70 years ago, it became accessible only

in recent years, thanks to new horizontal drilling technologies that allow curved wells that bypass difficult patches of hard rock. The Val D'Agri zone may have reserves of at least 420 million barrels and possibly much more, according to different sources, although it is not clear how much will actually be recoverable. Nonetheless, the zone is Europe's largest inland crude oil reservoir, and is being exploited by Italian parastatals AGIP and ENI, as well as ExxonMobil, Shell, Total and Enterprise. Over 100,000 barrels per day are trucked to ENI's refinery in the port city of Taranto. Total's Tempa Rossa field is expected to come on stream by 2010, with peak production of 50,000 barrels per day.

¶4. Natural gas deposits have also been discovered near the city of Matera, and deposits of methane in the Metaponto area along the Ionian Sea, although so far it is not being exploited and no one knows how much gas is there. There are great expectations that the oil and gas can lead to economic development and greater employment in the impoverished region, with minimal impact to the environment. Basilicata also produces hydroelectricity (200 million kWh in 2007), wind power (260 million kWh in 2007) and thermoelectricity (1 billion kWh in 2007).

Sicily - It's a Gas

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¶5. The discovery of natural gas deposits off the coast of Sicily was announced in July 2008 to great fanfare. The rights to the new gas fields are held by ENI (60 percent) and Italy's second-largest energy company, Edison. Gas reserves associated with the discovery -- mainly in an area 22 kilometers off the coast of Agrigento at a depth of 560 meters -- are estimated at approximately 16 billion cubic meters. Preliminary tests show

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production of around 190,000 cubic meters of gas per day. Edison CEO Umberto Quadrino has indicated that the discovery will boost the group's gas production by between 20 percent and 30 percent by 2011. In late September 2008, ENI announced another new gas discovery in the Sicilian Strait, about 20 kilometers off the coast of Agrigento, through the Argo 2 well, whose rights are also shared with Edison. Preliminary tests on the new discovery have shown a production of around 170,000 cubic meters of gas per day. The potential of all the ENI/Edison Sicilian offshore gas fields is estimated at approximately 18 billion cubic meters of recoverable reserves. ENI/Edison have not indicated when pumping will begin. The future addition of this new gas will of course contribute to Italy's domestic energy production, but given the country's growing demand and estimated current gas imports of about 80 billion cubic meters per year, it will not significantly decrease its dependence of foreign gas supplies.

¶6. ENI is also extracting gas inland in southeastern Sicily, and U.S.-French company Panther Oil and Gas is exploring in the same area. Panther has had ongoing legal problems with local governments and environmentalists in Val di Noto that have hindered most of its operations; the Consul General has done advocacy for the company, but the case is now tied up in the very slow Italian courts.

¶7. Sicily also has four oil fields with an estimated one billion barrels of recoverable oil in Ragusa, Gela, Vega and Perla. Exxon-Mobil has an oil refinery in Augusta (near Siracusa) that is the second largest producer of lubricants worldwide; it also produces aviation and maritime fuels and gasoline. An attempt to merge with a former ENI refinery to create a large fuel, lubricant and chemical operation failed in 2001 due to limiting anti-trust conditions. In June 2008, Russia's Lukoil purchased a 49 percent share in the ISAB refinery complex in Priolo, which it operates jointly with majority owner ERG (Italy's largest independent refiner). The facility has a capacity of about 320,000 barrels a day. ERG has stated it would use the Lukoil cash for expansion, including in the area of alternative and renewable energy sources.

## Apulia - Potential Source of Oil and Gas

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¶18. Recent exploratory drilling in the region of Apulia identified some 40 sites of oil deposits in Lecce Province and natural gas in the Foglia province. Regional authorities issued permits for ENI and Intergas Piu' to continue the drilling, but concrete results will not be available until 2011-2012 according to local officials.

## Alternative Sources on the Rise

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¶19. Renewable energy sources (not counting hydroelectricity) supply about two percent of Italy's energy needs. It is estimated that Italy has one of the largest potentials for solar energy in Europe. Southern Italy receives lots of sunlight, making it ideal for attempts to harness solar power. One of the most advanced undertakings, known as the "Archimedes Project," is being carried out by ENEL (Italy's largest power company) at Priolo Gargallo, Siracusa Province, Sicily. It will use high-performance technology developed by Nobel Laureate Carlo Rubbia and ENEA (the Italian National Agency for New Technologies, Energy and the Environment) in order to produce and store energy at night, or with cloudy skies, thanks to a mix of sodium and potassium. Thin mirrors will involve lower construction and installation costs than other similar schemes. Apulia and Basilicata are developing a project for the construction of a plant for solar energy research and production that is scheduled to begin in late 2008. Our contacts tell us that Italian government subsidies for the development of solar power have helped, but that bureaucratic hold-ups have hindered the use of electricity from these sources.

¶10. According to ENEL, Italy is the fifth-largest producer of wind energy in the world, though the country does not have the same natural advantage for wind power as other European countries. Most of Italy's existing wind farms are concentrated in southern regions and the islands of Sicily and Sardinia; one, on the border of Campania and Apulia, is reportedly the largest in Europe. Between them they produce annual revenue of some 450 million euros and employ 3,500 people. A British company, Blue H, is constructing the world's first floating wind turbines some 12 miles off the coast of Sicily, with plans to build a full-scale floating 90 megawatt wind farm in the region. There are also fairly large wind farms in Basilicata and Calabria; in the latter region, unfortunately, there have been reports of

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Mafia ('Ndrangheta) involvement in some of the projects.

¶11. Another promising source of renewable electricity generation for Italy could be geothermal energy. According to the International Geothermal Association (IGA), Italy has the fourth-largest installed geothermal capacity in the world (795 megawatts), and has over 90 percent of the total installed geothermal electricity production capacity in the EU. Analysts estimate that Italy could have the largest per capita geothermal potential in the world. Currently almost all of the production is in the North. According to our contacts, plans to exploit the huge potential in places like the volcanic province of Naples have been developed by local scientists but not implemented by the GOI or Italian power companies.

¶12. Waste-to-energy schemes, such as the construction of incinerators in Campania, may eventually help reduce the costs of electricity production. Unfortunately, the completion of a long-promised incinerator near Naples has been delayed by inefficiency and corruption, with a number of officials under indictment for fraud and related charges. A local entrepreneur in both the energy and environmental sectors told us that there are studies underway to assess the feasibility of plants exploiting landfill methane. (Such plants already exist in Tuscany and Emilia Romagna, providing considerable income to the communities that host them.) But perhaps the most promising

development is that an American company, San Diego-based Adaptive Arc, is in the process of negotiating contracts in Campania and Calabria (including Vibo Valentia and a consortium of seventeen towns in Cosenza province) to implement a plasma-based technology that converts waste -- even toxic waste -- into an artificial natural gas that can be used to produce electricity (reftel). The technology has the potential to both reduce the cost of electricity production and to provide a long-term solution to Campania's perennial waste disposal crisis. The potential value of contracts for Adaptive in southern Italy is approximately one billion USD.

#### Disparities Noted at Energy Conference

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¶13. The island of Capri hosted the southern interregional Confindustria (Industrialists' Confederation) Young Entrepreneurs' annual conference October 3-4, with the theme "Innovating Energies: Companies and the Environment." National Confindustria Young Entrepreneurs President Federica Guidi supported the Berlusconi Government's decision to restart Italy's nuclear power program, calling for the need to diversify energy sources. Campania Young Industrialists President Mauro Maccauro pointed out that businesses in the South are five times likelier to experience blackouts than those in the Center-North, while the price per megawatt hour of electricity in Sicily (156 euros) is double that in the Center-North (82 euros). He noted that energy prices have also risen much more in the South than in the North. Puglia Governor Nichi Vendola asked for government support of his alternative energy projects, including hydrogen. ENI CEO Paolo Scaroni warned that Italy was wedded to Russian natural gas for the foreseeable future and needed to maintain good relations with Russia (Scaroni has been in talks with his Gazprom counterpart, Alexei Miller, to form a "strategic partnership"). ENEL CEO Fulvio Conti lamented a system "full of contradictions," and warned that implementing the Kyoto protocol will lead to higher energy costs. Former UK Chancellor of the Exchequer Nigel Lawson opined that the environmental agenda had been "hijacked by climate change" on the part of "subprime science."

¶14. Comment: Although energy production is on the rise in Italy's South, these sources will not be enough to significantly reduce Italy's dependence on oil and gas imports any time soon. And despite the fact that southern Italy accounts for such a large proportion of the country's energy production, and notwithstanding the rise in energy production from alternative/renewable sources, the South suffers from more frequent blackouts than the rest of the country -- up to five times that of the North. This is largely due to a lack of investment in maintaining and improving energy infrastructure, according to ConGen contacts in the Naples Industrialists' Confederation. For example, the electrical transmission grid in Sicily does not have the capacity to transmit all of the energy produced by wind-powered turbines in the center of the island. Our contacts in the energy and environmental sectors complain that there has been greater emphasis on increasing energy production than on improving energy efficiency. Moreover, bureaucratic delays remain a strong impediment to further development of alternative energy sources, although procedures have improved in recent months. A few local entrepreneurs welcome recent GOI incentives -- up to 55 percent of costs --

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for solar energy installations and hope that they will be fully used by local communities, as they referred to awareness as a key factor for carrying out these programs. They tell us that local politicians are not yet seriously involved or committed to a systematic approach to energy issues. ConGen Naples will continue to raise these issues in both public fora and with local officials, and to assist American businesses in helping address southern Italy's energy needs.

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